Chemistry G11Q4.W1-Biochemistry-Qs.Bank

Multiple Choice

Identify the choice that best completes the statement or answers the question.

 1.	. The linking of amino acids by peptide bond formation	is
	a. biochemistry c. or	rganic chemistry
	b. composition d. pr	rotein synthesis
2.	. Which of the following elements is not essential in the	e makeup of body cells?
	a. carbon c. ni	itrogen
	b. magnesium d. oz	xygen
3.	Antibodies that fight disease organisms are	
	a. carbohydrates c. li	pids
	b. enzymes d. pr	roteins
4.	. One protein that transports substances through your be	odv is
	a. collagen c. ho	emoglobin
	b. an enzyme d. ke	eratin
5	Which of the following elements is not found in prote	ins?
 2.	a. hydrogen c. so	odium
	b. nitrogen d. su	ulfur
6	The basic building blocks of proteins are	
 0.	a amino acids c g	lycerols
	b. fatty acids d. si	ugars
7	When pentide bonds form pentides and are for	med
 <i>.</i>	a amino acids	xvgen
	b. carbon dioxide d. w	vater
8	often results in the loss of biological activity of	f nolvnentides
 0.	a Denaturation	entide bonding
	b Enzyme action d Si	ubstrating
9	A carbohydrate that contains 24 hydrogen atoms contains	ains oxygen atoms
).	a = 6	4
	b 12 d 4^{1}	8
10	In animals, excess glucose is stored in the liver and m	useles as
 10.	a cellulose	lycogen
	b chitin d st	tarch
11	Which of the following might be the number of oxyge	en atoms in a linid that contains 30 hydrogen atoms?
 11.	a 6 c 3	0
	b. 15 d. 6	0 0
12	The way applied to the paint of a car is an example of	` `a
 12.	a carbohydrate c ni	a rotein
	b lipid d st	teroid
12	Which of the following is not true about chalesterol?	
 13.	a Excess cholesterol can form the plaque that can c	log human arteries
	b. Controlling dietary cholesterol has no effect on bl	lood cholesterol levels.
	c. Exercise and stress affect cholesterol levels.	
	c. Excluse and stress affect endesteror revers.	

d. Your body does not need any cholesterol.

Name:

14.	Which of the following is not contained in a nucleic acid?						
	a. carbonate group	c.	phosphate group				
	b. nitrogen-containing base	d.	simple sugar				
 15.	A molecule contains sugar-phosphate chains a molecule is	nd ba	ase pairs of cytosine-guanine and uracil-adenine. The				
	a. an enzyme	c.	RNA				
	b. DNA	d.	a vitamin				
 16.	Which of the following vitamins is most likely	to b	e removed from a food by boiling the food?				
	a. vitamin A	c.	vitamin D				
	b. vitamin C	d.	All will be removed.				
 17.	The total of all chemical reactions necessary for	or the	e life of an organism is				
	a. digestion	c.	metabolism				
	b. glycolysis	d.	respiration				
 18.	The oxidation of fuel that releases energy need	led b	y cells is				
	a. digestion	c.	metabolism				
	b. glycolysis	d.	respiration				
 19.	Energy-storage molecules that contain three pl	iospl	nate groups are called				
	a. ADP	c.	DNA				
	b. ATP	d.	RNA				
 20.	Which is the correct sequence for the three ste	ps of	Frespiration?				
	a. the tricarboxylic acid cycle, glycolysis, ele	ectro	n transport chain				
	b. glycolysis, the tricarboxylic acid cycle, ele	ectro	n transport chain				
	c. electron transport chain, the tricarboxylic	acid	cycle, glycolysis				
	d. the tricarboxylic acid cycle, electron trans	port	chain, glycolysis				
 21.	Cells sometimes generate energy in the absence	e of	oxygen in a process called				
	a. digestion	c.	glycolysis				
	b. fermentation	d.	respiration				
 22.	Carbon dioxide is a product of						
	a. alcoholic fermentation	c.	evaporation				
	b. digestion	d.	lactic acid fermentation				

Completion

Complete each statement.

- 23. ______ are organic compounds that must be included in small amounts in the diet in order to maintain good health.
- 24. During the process of ______, the forces holding a polypeptide chain in its three-dimensional shape are broken.
- 25. The portion of an enzyme that binds to a substrate is the ______.
- 26. The _______ is the final stage of respiration in which energy is released from glucose.
- 27. ______ is a process by which cells obtain a small amount of energy from glucose anaerobically.

- 28. A compound that assists enzymes in catalyzing reactions is known as a(n) _____
- 29. ______ is the sum of all chemical reactions necessary for life in an organism.
- 30. ______ is the study of the chemistry of living things.
- 31. A process that takes place in the absence of oxygen is said to be a(n) _____ process.
- 32. The substance that binds to an enzyme is called a(n) ______.
- 33. ______ is a nucleic acid that contains the sugar deoxyribose.
- 34. ______ are molecules that carry chemical messages from one part of the body to another.
- 35. ______ are polymers formed by the amide linkage of monomers.
- 36. An organic molecule that contains carbon, hydrogen, and oxygen in a ratio of about two hydrogens and one oxygen for every carbon atom is a(n) ______.
- 37. The process by which chemical energy is extracted from glucose is ______.

38. The nucleic acid that contains the sugar ribose is called ______.

- 39. A(n) ______ is a polymer that consists of carbon, hydrogen, oxygen, nitrogen, and phosphorus.
- 40. The monomers that join together to form proteins are called ______.
- 41. A(n) ______ is a long-chain carboxylic acid.
- 42. The term ______ refers to any reaction that takes place only in the presence of oxygen.

Matching

Match each statement with the correct item below.

- a. involves substrate and an active site
- b. ADP plus phosphate
- c. glucose, cellulose, and sucrose
- d. fats, oils, and steroids
- e. amide group in proteins
- f. vitamin C, NADH, and FADH₂
- g. involves fuel molecules and oxygen
- h. involves proteins, carbohydrates, lipids, glycolysis, and fermentation
- i. contains adenine, guanine, and uracil
- j. hemoglobin, collagen, and keratin
- k. sugar, phosphate, and nitrogen base
- l. blood sugar
- m. starch, cellulose, and glycogen
- n. is caused by heat, pH changes, chemicals, or mechanical agitation
- o. made from glucose plus fructose
- p. contains carboxyl group and amino group
- q. produces ethanol or lactic acid
- r. DNA and RNA are examples
- s. contains adenine, guanine, and thymine
- t. cholesterol, vitamin D, and sex hormones are examples
- ____ 43. protein
- ____ 44. glucose
- 45. nucleic acids
- _____ 46. polysaccharides
- 47. RNA
- 48. fermentation
- 49. denaturation
- 50. sucrose
- 51. amino acid
- 52. DNA
- 53. steroids
- 54. induced fit
- 55. carbohydrate
- 56. peptide bond
- 57. biochemistry
- _____ 58. ATP
- 59. coenzymes
- 60. nucleotide
- 61. respiration
- 62. lipids

Name

Short Answer

Explain how the two terms in each of the following pairs differ from each other.

- 63. saturated fatty acids and unsaturated fatty acids
- 64. RNA and DNA
- 65. aerobic and anaerobic

Scientists have discovered a new organism that contains the enzyme cryptase. The graph in Figure 19-2 shows how the activity of that enzyme varies with changes in temperature. The scale on the vertical axis shows the relative activity of the enzyme with 100 representing maximum activity, 50 representing half of maximum activity, and so on. Answer the following questions about this graph.



- 66. How is the activity of the enzyme affected by heating it from -10°C to 0°C? from 10°C to 20°C?
- 67. How is the activity of the enzyme affected by cooling it from 0°C to -10°C? from -10°C to -20°C?
- 68. In what part(s) of the world would you predict that this new organism was found?
- 69. Would you expect to find this organism in the human body? Why or why not?
- 70. Suggest a reason why the enzyme becomes inactive at high temperatures.

Problem

The following questions are some major biochemical families of compounds. Match the letter for the correct formula from Figure 19-1 that belongs to each of these families.



Figure 19-1

- 71. Amino acid _____
- 72. Dipeptide _____
- 73. Disaccharide _____
- 74. Steroid _____
- 75. Triglyceride _____

Chemistry G11Q4.W1-Biochemistry-Qs.Bank Answer Section

MULTIPLE CHOICE

1.	ANS:	D	PTS:	1	DIF:	В	OBJ:	19-1
2.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-1
3.	ANS:	D	PTS:	1	DIF:	В	OBJ:	19-2
4.	ANS:	С	PTS:	1	DIF:	В	OBJ:	19-2
5.	ANS:	С	PTS:	1	DIF:	В	OBJ:	19-1
6.	ANS:	А	PTS:	1	DIF:	В	OBJ:	19-4
7.	ANS:	D	PTS:	1	DIF:	В	OBJ:	19-4
8.	ANS:	А	PTS:	1	DIF:	В	OBJ:	19-2
9.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-1
10.	ANS:	С	PTS:	1	DIF:	В	OBJ:	19-1
11.	ANS:	А	PTS:	1	DIF:	А	OBJ:	19-1
12.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-1
13.	ANS:	D	PTS:	1	DIF:	В	OBJ:	19-1
14.	ANS:	А	PTS:	1	DIF:	В	OBJ:	19-4
15.	ANS:	С	PTS:	1	DIF:	А	OBJ:	19-4
16.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-1
17.	ANS:	С	PTS:	1	DIF:	В	OBJ:	19-3
18.	ANS:	D	PTS:	1	DIF:	В	OBJ:	19-3
19.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-3
20.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-3
21.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-3
22.	ANS:	А	PTS:	1	DIF:	В	OBJ:	19-3

COMPLETION

23. ANS: Vitamins

24.	PTS: ANS:	1 denaturation	DIF:	В	OBJ:	19-2
25.	PTS: ANS:	1 active site	DIF:	В	OBJ:	19-2
26.	PTS: ANS:	1 electron transj	DIF: port cha	B ain	OBJ:	19-2
27.	PTS: ANS:	1 Fermentation	DIF:	В	OBJ:	19-3
	PTS:	1	DIF:	В	OBJ:	19-3

28.	ANS:	coenzyme
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29.	PTS: ANS:	1 Metabolism	DIF:	В	OBJ:	19-2
30.	PTS: ANS:	1 Biochemistry	DIF:	В	OBJ:	19-3
31.	PTS: ANS:	1 anaerobic	DIF:	В	OBJ:	19-1
32.	PTS: ANS:	1 substrate	DIF:	В	OBJ:	19-3
33.	PTS: ANS:	1 DNA	DIF:	В	OBJ:	19-2
34.	PTS: ANS:	1 Hormones	DIF:	В	OBJ:	19-1
35.	PTS: ANS:	1 Proteins	DIF:	В	OBJ:	19-1
36.	PTS: ANS:	1 carbohydrate	DIF:	В	OBJ:	19-1
37.	PTS: ANS:	1 respiration	DIF:	В	OBJ:	19-1
38.	PTS: ANS:	1 RNA	DIF:	В	OBJ:	19-3
39.	PTS: ANS:	1 nucleic acid	DIF:	В	OBJ:	19-1
40.	PTS: ANS:	1 amino acids	DIF:	В	OBJ:	19-1
41.	PTS: ANS:	1 fatty acid	DIF:	В	OBJ:	19-1
42.	PTS: ANS:	1 aerobic	DIF:	В	OBJ:	19-1
	PTS:	1	DIF:	В	OBJ:	19-3

MATCHING

43.	ANS:	J	PTS:	1	DIF:	В	OBJ:	19-1
44.	ANS:	L	PTS:	1	DIF:	В	OBJ:	19-1
45.	ANS:	R	PTS:	1	DIF:	В	OBJ:	19-1
46.	ANS:	Μ	PTS:	1	DIF:	В	OBJ:	19-1
47.	ANS:	Ι	PTS:	1	DIF:	В	OBJ:	19-1
48.	ANS:	Q	PTS:	1	DIF:	В	OBJ:	19-3
49.	ANS:	Ν	PTS:	1	DIF:	В	OBJ:	19-2
50.	ANS:	0	PTS:	1	DIF:	В	OBJ:	19-4
51.	ANS:	Р	PTS:	1	DIF:	В	OBJ:	19-4
52.	ANS:	S	PTS:	1	DIF:	В	OBJ:	19-1
53.	ANS:	Т	PTS:	1	DIF:	В	OBJ:	19-1
54.	ANS:	А	PTS:	1	DIF:	В	OBJ:	19-2
55.	ANS:	С	PTS:	1	DIF:	В	OBJ:	19-1
56.	ANS:	Е	PTS:	1	DIF:	В	OBJ:	19-1
57.	ANS:	Н	PTS:	1	DIF:	В	OBJ:	19-1
58.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-3
59.	ANS:	F	PTS:	1	DIF:	В	OBJ:	19-2
60.	ANS:	Κ	PTS:	1	DIF:	В	OBJ:	19-1
61.	ANS:	G	PTS:	1	DIF:	В	OBJ:	19-3
62.	ANS:	D	PTS:	1	DIF:	В	OBJ:	19-1

SHORT ANSWER

63. ANS:

Saturated fatty acids contain carbon-carbon bonds that are all single; unsaturated fatty acids contain one or more carbon-carbon double or triple bonds.

PTS: 1 DIF: B OBJ: 19-1

64. ANS:

RNA contains ribose and uracil and exists as a single chain; DNA contains deoxyribose and thymine and exists as a double-chain helical structure.

PTS: 1 DIF: B OBJ: 19-1

65. ANS:

66. ANS:

Aerobic processes require oxygen; anaerobic processes take place in the absence of oxygen.

PTS: 1 DIF: B OBJ: 19-3

reduced by 10% (100%-90%); reduced by about 2/3 (70%-25%)

PTS: 1 DIF: B OBJ: 19-2

67	7. 1 i	ANS: increased by about 10% (90%-100%); decreased by about 10% (100%-90%)								
]	PTS:	1	DIF:	В	OBJ:	19-2			
68	8. 4	ANS:	а а	1	•••••••••••••••••••••••••••••••••••••••		11 0			
	ä	at the north or south poles or in ice fields that are usually frozen								
]	PTS:	1	DIF:	В	OBJ:	19-2			
69	9. 4	ANS:	· · · · · 1	1	(2000)	、 、				
		NO, 11 1	s inactive at bo	ody tem	perature (38°C)).				
]	PTS:	1	DIF:	В	OBJ:	19-2			
70	70. ANS:									
	1	Answers will vary. One reason may be that high temperatures denature the protein molecule.								
]	PTS:	1	DIF:	В	OBJ:	19-2			
PROBL	EM									
71	1	ANS:								
	(С								
	1	PTS:	1	DIF	В	OBI	19-1			
72	2.	ANS:	1		D	o Dr.				
]	В								
]	PTS:	1	DIF:	В	OBJ:	19-1			
73	3.	ANS:								
]	E								

DIF: B

DIF: B

DIF: B

PTS: 1

PTS: 1

PTS: 1

74. ANS: A

75. ANS: F OBJ: 19-1

OBJ: 19-1

OBJ: 19-1